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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,360	09/23/2003	Su-Hyun Park	8733.924.00-US	9189
30827	7590	03/04/2005	EXAMINER	
MCKENNA LONG & ALDRIDGE LLP			CHOWDHURY, TARIFUR RASHID	
1900 K STREET, NW			ART UNIT	
WASHINGTON, DC 20006			PAPER NUMBER	
			2871	

DATE MAILED: 03/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/667,360

Applicant(s)

PARK ET AL.

Examiner

Tarifur R. Chowdhury

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 12-15 and 18-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 10, 11, 16 and 17 is/are rejected.
- 7) ☒ Claim(s) 5-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claims 12-15 and 18-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 01/24/05.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Reference numeral "112" in Fig. 4B. It appears that "112" should be changed to -142-. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Ko, USPAT 6,794,216.**

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Ko discloses (col. 6, lines 4-25) and shows in Fig. 5A, a liquid crystal display device, comprising:

- coating a cholesteric liquid crystal material (106) on a substrate (100) to form a cholesteric liquid crystal layer, the substrate having plurality of sub-pixel regions;

Art Unit: 2871

- disposing a mask (108) having a plurality of open portions (108a) over the cholesteric liquid crystal layer (106);
- irradiating the cholesteric liquid crystal layer through the open portions of the mask; and
- curing the cholesteric liquid crystal layer, wherein each open portion (108a) is smaller than each sub-pixel region (106a, 106b, 106c) (Fig. 5A).

Accordingly, claim 1 is clearly anticipated.

As to claim 2, Ko also discloses and shows in Fig. 5 about forming a light absorption layer (102) between the substrate (100) and the cholesteric liquid crystal layer (106).

As to claims 3 and 4, it is also clear from Fig. 5A of Ko that the plurality of open portions (108a) and the plurality of sub-pixel regions (106a, 106b, 106c) have a substantially rectangular shape, and each open portion has a narrower width than each sub-pixel region, wherein the plurality of sub-pixel regions include red sub-pixel region (106a), green sub-pixel region (106b) and blue sub-pixel region (106c).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2871

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being obvious over Applicant's admitted prior art (AAPA) in view of Ko.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29,

Art Unit: 2871

1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

10. The AAPA described in the instant application discloses and shows in Figs. 1 and 3, a fabricating method of a liquid crystal display device, comprising:

- forming a light absorption layer (112) on a first substrate (110) having a plurality of sub-pixel regions (Psub);
- forming a cholesteric liquid crystal color filter layer (114) on the light absorption layer;
- forming a common electrode (116) on the cholesteric liquid crystal color filter layer;
- forming a gate line on a second substrate (150);
- forming a data line (154) crossing the gate line;
- forming a switching device connected to the gate line and data line;
- forming a passivation layer (158) on the switching device;
- forming a pixel electrode (160) on the passivation layer;
- attaching the first and second substrates such that the common electrode faces the pixel electrode; and
- forming a liquid crystal layer between the common electrode and the pixel electrode.

The AAPA differs from the claimed invention because it does not explicitly

Art Unit: 2871

disclose the use of mask having plurality of open portions wherein each portion is smaller than each sub-pixel regions.

Ko discloses a substrate for a liquid crystal display device wherein the step Includes:

- coating a cholesteric liquid crystal material (106) on a substrate (100) to form a cholesteric liquid crystal layer, the substrate having plurality of sub-pixel regions; disposing a mask (108) having a plurality of open portions (108a) over the cholesteric liquid crystal layer (106); irradiating the cholesteric liquid crystal layer through the open portions of the mask; and curing the cholesteric liquid crystal layer, wherein each open portion (108a) is smaller than each sub-pixel region (106a, 106b, 106c) (Fig. 5A). Ko also discloses that such method is advantageous because the boundaries of each sub-color filters is substituted for black matrixes such that the boundaries reflect incident light having a long wavelength and thereby function as a black matrix (col. 3, lines 25-30).

Ko is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use a mask having plurality of open portions wherein each portion is smaller than each sub-pixel regions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use a mask having plurality of open portions wherein each portion is smaller than each sub-pixel regions to form the cholesteric color filter layer so that the boundaries of each sub-color filters is substituted for black matrixes

Art Unit: 2871

such that the boundaries reflect incident light having a long wavelength and thereby function as a black matrix, as per the teachings of Ko.

Accordingly, claims 16 and 17 would have been obvious.

11. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being obvious over Ko in view of Lee, USPAT 6,606,137.

The applied references have common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Ko differs from the claimed invention because he does not explicitly disclose that the plurality of open portions includes first to third open portions having first to third transmittances, respectively, and the first transmittance is higher than the second transmittance and the second transmittance is higher than the third transmittance.

Lee discloses a method of fabricating a substrate for a liquid crystal display device comprising the step of coating a cholesteric liquid crystal material on a substrate, disposing a mask having a plurality of openings over the cholesteric liquid crystal layer and irradiating the cholesteric liquid crystal layer through the open portions of the masks and cure the cholesteric liquid crystal layer. Lee also discloses that the first, second and third open portions of the masks have different transmittance wherein the first transmittance corresponding to red sub-pixel regions have higher transmittance than the second transmittance corresponding to green sub-pixel regions and the second transmittance is higher than the third transmittance corresponding to blue sub-pixel regions (col. 3, lines 5-11). Lee further discloses that because of the openings having different transmittance, a color mixture or overlap is prevented in adjacent portions between color filters (col. 3, lines 12-18).

Lee is evidence that ordinary workers in the art would find a reason, suggestion or motivation to have open portions of the masks with different transmittances.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the method of Ko by adopting a mask with plurality of first to third open portions having first to third transmittances, respectively, and the first transmittance is higher than the second transmittance and the second

Art Unit: 2871

transmittance is higher than the third transmittance so that a color mixture or overlap is prevented in adjacent portions between color filters, as per the teachings of Lee.

Accordingly, claims 10 and 11 would have been obvious.

Allowable Subject Matter

12. Claims 5-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 6-9 are objected due to their direct/indirect dependency of claim 5.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

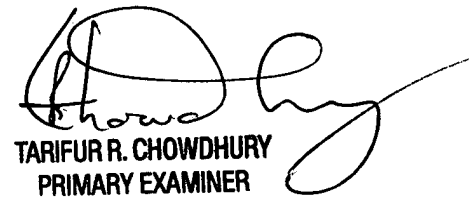
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R. Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2871

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRC
February 25, 2005



TARIFUR R. CHOWDHURY
PRIMARY EXAMINER